

CLAIMS

It is claimed:

1 1. A method of automatically adjusting a
2 fragmentation threshold for data transmissions between an
3 access point and one or more associated wireless units via
4 a wireless medium associated with a wireless network
5 system including a wired backbone network, comprising:

6 determining a transmission error factor indicative of
7 errors occurring in the transmission of one or more data
8 packets between said access point and said one or more
9 associated wireless units; and

10 automatically adjusting said fragmentation threshold
11 based on said transmission error factor.

1 2. The method of claim 1, wherein determining said
2 transmission error factor comprises:

3 transmitting said one or more data packets; and
4 determining said transmission error factor based on a
5 number of acknowledgement packets received in response to
6 said transmitted one or more data packets.

1 3. The method of claim 1, wherein said transmission
2 error factor depends on a number of errors occurring in
3 the transmission of said one or more data packets for a
4 given time period.

1 4. The method of claim 1, wherein said transmission
2 error factor depends on clusters of transmission errors
3 greater than sporadic transmission errors in the
4 transmission of said one or more data packets.

1 5. The method of claim 1, wherein automatically
2 adjusting said fragmentation threshold comprises:

3 comparing said transmission error factor to an upper
4 threshold; and

5 decreasing said fragmentation threshold if said
6 transmission error factor is above said upper threshold.

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1 6. The method of claim 1, wherein automatically
2 adjusting said fragmentation threshold comprises:

3 comparing said transmission error factor to a lower
4 threshold; and

5 increasing said fragmentation threshold if said
6 transmission error factor is below said lower threshold.

1 7. The method of claim 1, wherein automatically
2 adjusting said fragmentation threshold comprises:

3 comparing said transmission error factor to an upper
4 threshold;

5 decreasing said fragmentation threshold if said
6 transmission error factor is above said upper threshold;

7 comparing said transmission error factor to a lower
8 threshold; and

9 increasing said fragmentation threshold if said
10 transmission error factor is below said lower threshold.

1 8. The method of claim 1, wherein automatically
2 adjusting said fragmentation threshold comprises changing
3 said fragmentation threshold by a fixed quantity each time
4 said fragmentation threshold is adjusted.

1 9. The method of claim 1, wherein automatically
2 adjusting said fragmentation threshold comprises changing
3 said fragmentation threshold by a divisional factor each
4 time said fragmentation threshold is adjusted, wherein
5 said fragmentation threshold depends on a pre-determined
6 fragmentation threshold divided by said divisional factor.

1 10. The method of claim 9, wherein said pre-
2 determined fragmentation is related to a maximum data
3 packet size for transmission over said wired backbone
4 network.

1 11. The method of claim 9, wherein said pre-
2 determined fragmentation is related to a maximum data
3 packet size for transmission over said wireless medium.

1 12. A access point to communicate with one or more
2 associated wireless units via a wireless medium to provide
3 said one or more wireless units access to a wired backbone
4 network of a wireless network system, comprising a logic
5 circuit to:

6 determine a transmission error factor indicative of
7 errors occurring in the transmission of one or more data
8 packets from said access point to said one or more
9 associated wireless units; and
10 automatically adjusting a fragmentation threshold
11 based on said transmission error factor.

1 13. The access point of claim 12, wherein said logic
2 circuit in determining said transmission error factor is
3 capable of:

4 transmitting said one or more data packets to said
5 one or more associated wireless units; and
6 determining said transmission error factor based on a
7 number of acknowledgement packets received in response to
8 said transmitted one or more data packets from said one or
9 more associated wireless units.

1 14. The access point of claim 12, wherein said
2 transmission error factor depends on a number of errors
3 occurring in the transmission of said one or more data
4 packets for a given time period.

1 15. The access point of claim 12, wherein said
2 transmission error factor depends on clusters of
3 transmission errors greater than sporadic transmission
4 errors in the transmission of said one or more data
5 packets.

1 16. The access point of claim 12, wherein said logic
2 circuit in automatically adjusting said fragmentation
3 threshold is capable of:

4 comparing said transmission error factor to an upper
5 threshold; and

6 decreasing said fragmentation threshold if said
7 transmission error factor is above said upper threshold.

1 17. The access point of claim 12, wherein said logic
2 circuit in automatically adjusting said fragmentation
3 threshold is capable of:

4 comparing said transmission error factor to a lower
5 threshold; and

6 increasing said fragmentation threshold if said
7 transmission error factor is below said lower threshold.

1 18. The access point of claim 12, wherein said logic
2 circuit in automatically adjusting said fragmentation
3 threshold is capable of:

4 comparing said transmission error factor to an upper
5 threshold;

6 decreasing said fragmentation threshold if said
7 transmission error factor is above said upper threshold;

8 comparing said transmission error factor to a lower
9 threshold; and

10 increasing said fragmentation threshold if said
11 transmission error factor is below said lower threshold.

1 19. The access point of claim 12, wherein said logic
2 circuit in automatically adjusting said fragmentation
3 threshold is capable of changing said fragmentation
4 threshold by a fixed quantity each time said fragmentation
5 threshold is adjusted.

1 20. The access point of claim 12, wherein said logic
2 circuit in automatically adjusting said fragmentation
3 threshold is capable of changing said fragmentation
4 threshold by a divisional factor each time said
5 fragmentation threshold is adjusted, wherein said
6 fragmentation threshold depends on a pre-determined
7 fragmentation threshold divided by said divisional factor.

1 21. The access point of claim 20, wherein said pre-
2 determined fragmentation is related to a maximum data
3 packet size for transmission over said wired backbone
4 network.

1 22. The access point of claim 20, wherein said pre-
2 determined fragmentation is related to a maximum data
3 packet size for transmission over said wireless medium.

1 23. A machine readable medium including a software
2 routine for automatically adjusting a fragmentation
3 threshold for data transmissions between an access point
4 and one or more associated wireless units via a wireless
5 medium associated with a wireless network system including
6 a wired backbone network, said software routine is capable
7 of controlling a logic circuit to:

8 determine a transmission error factor indicative of
9 errors occurring in the transmission of one or more data
10 packets between said access point and said one or more
11 associated wireless units; and
12 automatically adjust said fragmentation threshold
13 based on said transmission error factor.

1 24. The machine readable medium of claim 23, wherein
2 said software routine is capable of controlling said logic
3 circuit in determining said transmission error factor to:

4 transmit said one or more data packets; and
5 determine said transmission error factor based on a
6 number of acknowledgement packets received in response to
7 said transmitted one or more data packets.

1 25. The machine readable medium of claim 23, wherein
2 said transmission error factor depends on a number of
3 errors occurring in the transmission of said one or more
4 data packets for a given time period.

1 26. The machine readable medium of claim 23, wherein
2 said transmission error factor depends on clusters of
3 transmission errors greater than sporadic transmission
4 errors in the transmission of said one or more data
5 packets.

1 27. The machine readable medium of claim 23, wherein
2 said software routine is capable of controlling said logic
3 circuit in automatically adjusting said fragmentation
4 threshold to:

5 compare said transmission error factor to an upper
6 threshold; and

7 decrease said fragmentation threshold if said
8 transmission error factor is above said upper threshold.

1 28. The machine readable medium of claim 23, wherein
2 said software routine is capable of controlling said logic
3 circuit in automatically adjusting said fragmentation
4 threshold to:

5 compare said transmission error factor to a lower
6 threshold; and

7 increase said fragmentation threshold if said
8 transmission error factor is below said lower threshold.

1 29. The machine readable medium of claim 23, wherein
2 said software routine is capable of controlling said logic
3 circuit in automatically adjusting said fragmentation
4 threshold to:

5 compare said transmission error factor to an upper
6 threshold;

7 decrease said fragmentation threshold if said
8 transmission error factor is above said upper threshold;

9 compare said transmission error factor to a lower
10 threshold; and

11 increase said fragmentation threshold if said
12 transmission error factor is below said lower threshold.

1 30. The machine readable medium of claim 23, wherein
2 said software routine is capable of controlling said logic
3 circuit in automatically adjusting said fragmentation
4 threshold to change said fragmentation threshold by a
5 fixed quantity each time said fragmentation threshold is
6 adjusted.

1 31. The machine readable medium of claim 23, wherein
2 said software routine is capable of controlling said logic
3 circuit in automatically adjusting said fragmentation
4 threshold to change said fragmentation threshold by a
5 divisional factor each time said fragmentation threshold
6 is adjusted, wherein said fragmentation threshold depends
7 on a pre-determined fragmentation threshold divided by
8 said divisional factor.

1 32. The machine readable medium of claim 31, wherein
2 said pre-determined fragmentation is related to the
3 maximum data packet size for transmission over said wired
4 backbone network.

1 33. The machine readable medium of claim 31, wherein
2 said pre-determined fragmentation is related to the
3 maximum data packet size for transmission over said
4 wireless medium.

1 34. A method of automatically adjusting a
2 fragmentation threshold for data transmissions between an

3 access point and one or more associated wireless units via
4 a wireless medium associated with a wireless network
5 system including a wired backbone network, comprising:

6 determining a transmission error factor indicative of
7 errors occurring in the transmission of one or more data
8 packets between said access point and said one or more
9 associated wireless units; and

10 automatically adjusting said fragmentation threshold
11 based on said transmission error factor, wherein said one
12 or more data packets each have a finite time duration;

13 changing a data rate of the transmissions of said one
14 or more data packets; and

15 automatically adjusting said fragmentation threshold
16 in response to said data rate change so that the finite
17 time duration for said one or more data packets remains
18 substantially the same.

1 35. A access point to communicate with one or more
2 associated wireless units via a wireless medium to provide
3 said one or more wireless units access to a wired backbone
4 network of a wireless network system, comprising a logic
5 circuit to:

6 determine a transmission error factor indicative of
7 errors occurring in the transmission of one or more data
8 packets from said access point to said one or more
9 associated wireless units; and

10 automatically adjust a fragmentation threshold based
11 on said transmission error factor, wherein said one or
12 more data packets each have a finite time duration; and.

13 automatically adjust said fragmentation threshold in
14 response to a data rate change of the transmission of said
15 one or more data packets so that the finite time duration
16 for said one or more data packets remains substantially
17 the same.

1 36. A machine readable medium including a software
2 routine for automatically adjusting a fragmentation
3 threshold for data transmissions between an access point
4 and one or more associated wireless units via a wireless
5 medium associated with a wireless network system including
6 a wired backbone network, said software routine is capable
7 of controlling a logic circuit to:

8 determine a transmission error factor indicative of
9 errors occurring in the transmission of one or more data
10 packets from said access point to said one or more
11 associated wireless units; and

12 automatically adjust a fragmentation threshold based
13 on said transmission error factor, wherein said one or
14 more data packets each have a finite time duration; and.

15 automatically adjust said fragmentation threshold in
16 response to a data rate change of the transmission of said
17 one or more data packets so that the finite time duration
18 for said one or more data packets remains substantially
19 the same.